



PTO/SB/088 (02-03)

Approved for use through 04/30/2003. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known

Application Number	10/622,335
Filing Date	7/17/2003
First Named Inventor	Marpe, et al.
Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket Number	SCHO0150

Sheet 1 of 6

OTHER PRIOR ART–NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume–issue number(s), publisher, city and/or country where published.	T ²
Ø	A	Wiegand, Thomas, et al; "Draft ITU-T; Recommendation and Final Draft International Standard of Joint Video Specification; ITU-T Rec. H.264; ISO/IEC 1449-10 AVC"; 8th Meeting; Geneva, Switzerland, 23-27 May 2003	
Ø	B	Wiegand, Thomas, et al; "Overview of the H.264/AVC Video Coding Standard"; IEEE Transaction on Circuit and Systems for Video Technology, Vol. 13 No. 7, July	
Ø	C	ISO/IEC 13818-2: 1995 (E) Specification, July	
Ø	D	Sullivan, Gary: "Draft Text of Recommendation H.263 Version 2 ("H.263+") for Decision"; Study Group 16 - Contribution COM-999; Study Period 1997-2000	
Ø	E	International Organization For Standardization; Organization Normalization; "Information Technology – Coding of Audio Visual Objects –Part 2: Visual"; N4350 DEC 2000	
Ø	F	Gonzales, C.A., et al; "DCT Coding for Motion Video Storage using Adaptive Arithmetic Coding"; Signal Processing: Image Communication 2 (1960); Vol. 2, No. 2, pp 145-154; August 1990	
Ø	G	Marpe, Detlev, et al; "Adaptive Codes for H.26L"; ITU-T Telecommunications Standardization Sector; Video Coding Experts Group Document; Document VCEG-L13; Twelfth Meeting; Eibsee, Germany, 9-12 January 2001	
Ø	H	Marpe, Detlev, et al; "Further Results for CABAC entropy coding scheme"; ITU-T Telecommunications Standardization Sector; Video Coding Experts Group Document; Document VCEG-M59; Thirteenth Meeting; Austin, Texas, USA 2-4 April 2001	
Ø	I	Marpe, Detlev, et al; "Improved CABAC"; ITU-T Telecommunications Standardization Sector; Video Coding Experts Group Document; Document VCEG-018r1; 15th Meeting; Pattaya, Thailand, 4-6 December 2001	
Ø	J	Marpe, Detlev, et al; "New Results on Improved CABAC"; Joint Video Team of ISO/IEC JTC1/SC29/WG11, Document JVT-B101; 2nd Meeting; Geneva, CH, Jan. 29-Feb. 1, 2002	

Examiner Signature	<i>Liam Mow</i>	Date Considered	1/3/05
--------------------	-----------------	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	10/622,335
		Filing Date	7/17/2003
		First Named Inventor	Marpe, et al.
		Art Unit	Unknown
		Examiner Name	Unknown
Sheet 2	of 6	Attorney Docket Number	SCHO0150

OTHER PRIOR ART–NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
Q	K	Schwarz, Heiko, et al.; "Improved CABAC"; Joint Video Team of ISO/IEC MPEG & ITU-T VCEG; Document JVT-C060; 3rd Meeting: Fairfax, Virginia, USA, 6-10 May 2002.	
Q	L	Marpe, Detlev, et al.; "Fast Arithmetic Coding for CABAC"; Joint Video Team of ISO/IEC MPEG & ITU-T VCEG; Document JVT-C060; 3rd Meeting: Fairfax, Virginia, USA, 6-10 May 2002.	
Q	M	Schwarz, Heiko, et al.; "CABAC and Slices"; Joint Video Team of ISO/IEC MPEG & ITU-T VCEG; Document JVT-D020r1; 4th Meeting: Klagenfurt, Austria, 22-26 July 2002	
Q	N	Karczewicz, Marta, et al.; "Analysis and Simplification of Intra Prediction"; Joint Video Team of ISO/IEC MPEG & ITU-T VCEG; Document JVT-D025; 4th Meeting: Klagenfurt, Austria, 22-26 July 2002	
Q	O	Marpe, Detlev, et al.; "Proposed Cleanup changes for CABAC"; Joint Video Team of ISO/IEC MPEG & ITU-T VCEG; Document: JVT-E059; 5th Meeting: Geneva, CH, 9-17 October 2002	
Q	P	Bossen, Frank; "CABAC cleanup and complexity reduction"; Joint Video Team of ISO/IEC MPEG & ITU-T VCEG; Document: JVT-Exxx; 5th Meeting: Geneva, Switzerland, October 2002	
Q	Q	Marpe, Detlev, et al.; "Final CABAC cleanup"; Joint Video Team of ISO/IEC MPEG & ITU-T VCEG; Document: JVT-F039; 6th Meeting: Awaji, Island, JP, 5-13 December 2002	
Q	R	Marpe, Detlev and Hans L. Cycon; "Very Low Bit – Rate Video Coding Using Wavelet – Based Techniques"; IEEE Transactions on Circuits and Systems for Video Technology; Vol. 9, No. 1, Feb 1999.	
Q	S	Heising, G., et al; "Wavelet-based very low Bitrate coding using image warping"; IEE Proc.-Vis. Image Signal Process, Vol 148, No 2, April 2001	
Q	T	Choi, Seung-Jong, and John W. Woods; "Motion-Compensated 3-D Subband Coding of Video"; IEEE Transactions on Image Processing, VOL 8, No. Feb. 1999	

Examiner Signature	<i>Cam Mac</i>	Date Considered	1/3/05
--------------------	----------------	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	10/622,335
		Filing Date	7/17/2003
		First Named Inventor	Marpe, et al.
		Art Unit	Unknown
		Examiner Name	Unknown
Sheet 3	of 6	Attorney Docket Number	SCHO0150

OTHER PRIOR ART—NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
Q	U	Said, Amir and William A. Pearlman; "A new fast and efficient image codec based on set partitioning in hierarchical trees"; IEEE Int. Symp on Circuits and Systems, Chigcago, IL May 1993	
Q	V	Marpe, Detlev and Hans L. Cycon; "Efficient Pre-Coding Techniques for Wavelet-Based Image Compression"; Proc. Int. Picture Coding Symposium, pp. 45-50, 1997	
Q	W	Rissanen, Jorma and Glen G. Landgon, Jr; "Universal Modeling and Coding"; IEEE Transactions on Information Theory; Vol. It-27, No. 1, January 1981	
Q	X	Rissanen, Jorma; "Universal Coding, Information, Prediction, and Estimation"; IEEE Transactions on Information Theory; Vol. It-30, No. 4, July 1984	
Q	Y	Weinberger, Marcelo J., et al; "Applications of universal context modeling to lossless compression of grey-scale images"; IEEE Transactions on Imaging Processing; Vol. 5, No. 4, April 1996	
Q	Z	Teuhola, Jukka; "A Compression Method of Clustered Bit-Vektors"; Information Processing Letters, Vol 7, Number 6, pp. 308-311, October 1978	
Q	AA	Gallager, Robert G. and David C. Van Voorhis; "Optimal Source Codes for Geometrically Distributed Integer Alphabets"; IEEE Transactions on Information Technology; pp 228-230, March 1975	
Q	AB	Mrak, Marta, et al.; "A Context Modeling Algorithm and its Application in Video Compression"; Fraunhofer-Institute HHI, Berlin, Germany April 1999	
Q	AC	Pennebaker, W.B., et al; "An overview of the basic principles of the Q-Coder adaptive binary arithmetic coder"; IBM. J. Res. Develop, Vol 32, No. 6, November 1988	
Q	AD	Rissanen, Jorma and K. M. Mohiuddin; "A multiplication-free multialphabet arithmetic code"; IEEE Transactions on Communications; Vol. 37, No. 2, February 1989	

Examiner Signature	<i>Cam M...</i>	Date Considered	1/8/05
--------------------	-----------------	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	10/622,335
		Filing Date	7/17/2003
		First Named Inventor	Marpe, et al.
		Art Unit	Unknown
		Examiner Name	Unknown
Sheet 4	of 6	Attorney Docket Number	SCHO0150

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
Q	AE	Howard, Paul G. and Jeffrey Scott Viter; "Practical implementations of arithmetic code"; Brown University, Department of Computer Science, Technical Report No. 92-18; Revised version, April 1992, Formerly Technical Report No. CS-91-45.	
Q	AF	"Sample Data Coding"; Chapter 12, pp. 473-484 ; MAY 2001	
Q	AG	Moffat, Alistair, et al; "Arithmetic Coding Revisited"; ACM Transactions on Information Systems, Vol 16, No. 3, pages 256-294, July 1998	
Q	AH	Wiegand, Thomas, et al; "Rate-Constrained Coder Control and Comparison of Video Coding Standards"; IEEE Transactions on Circuits and Systems for VideoTechnology; Vol. 13, No. 7, July 2003	
Q	AI	Wiegand, Thomas; "Draft ITU-T Recommendation and Final Draft International Standard of Joint Video Specification (ITU-T Rec. H.264; ISO/IEC; 14496-10 AVC)"; Document: JVT-G050; 7th Meeting: Pattaya, Thailand, 7-14 March 2003	
Q	AJ	"Video Codec For Audiovisual Services at p64 kbit/s"; International Telecommunication Union; H.261 (03/93)	
Q	AK	Wenger, Stephen; "H.264/AVC Over IP"; IEEE Transactions on Circuits and Systems for VideoTechnology; Vol. 13, No. 7, July 2003	
Q	AL	Stockhammer, Thomas, et al; "H.264/AVCinWireless Environments"; IEEE Transactions on Circuits and Systems for VideoTechnology; Vol. 13, No. 7, July 2003	
Q	AM	Wedi, Thomas and Hans Georg Musmann; "Motion-and Aliasing-Compensated Prediction for Hybrid Video Coding"; IEEE Transactions on Circuits and Systems for VideoTechnology; Vol. 13, No. 7, July 2003	
Q	AN	Wiegand, Thomas, et al; "Long Term Memory Motion-Compensated Prediction"; IEEE Transactions on Circuits and Systems for VideoTechnology; Vol. 9, No. 1, Feb. 1999	

Examiner Signature	<i>Cam Mar</i>	Date Considered	1/3/05
--------------------	----------------	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	10/622,335
		Filing Date	7/17/2003
		First Named Inventor	Marpe, et al.
		Art Unit	Unknown
		Examiner Name	Unknown
Sheet 5	of 6	Attorney Docket Number	SCHO0150

OTHER PRIOR ART–NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
Q	AO	Flierl, Markus, et al; "A locally design algorithm block-based multi-hypothesis motion-compensated prediction"; Proceedings of the IEEE DCC, pp. 239-248, Snowbird, Utah; March 1988	
Q	AP	Flierl, Markus and Bernd Girod; "Generalized B Pictures and the Draft H.264/AVC Codec"; IEEE Transactions on Circuits and Systems for VideoTechnology; Vol. 13, No. 7, July 2003	
Q	AQ	Wiegand, Thomas, et al; "Rate-Constrained Coder Control and Comparison of Video Coding Standards"; IEEE Transactions on Circuits and Systems for VideoTechnology; Vol. 13, No. 7, July 2003	
Q	AR	Karczewicz, Marta and Ragip Kurceren; "The SP – and SI – Frames Design for H.264/AVC"; IEEE Transactions on Circuits and Systems for VideoTechnology; Vol. 13, No. 7, July 2003	
Q	AS	Marpe, Detlev et al; "Context-Based Adaptive Binary Arithmetic Coding in the H.264/AVC Video Compression Standard"; IEEE Transactions on Circuits and Systems for VideoTechnology; Vol. 13, No. 7, July 2003	
Q	AT	Malvar, Henrique S. et al; "Low-complexity Transformed Quantization in H.264/AVC"; IEEE Transactions on Circuits and Systems for VideoTechnology; Vol. 13, No. 7, July 2003	
Q	AU	List, Peter, et al; "Adaptive Deblocking Filter"; IEEE Transactions on Circuits and Systems for VideoTechnology; Vol. 13, No. 7, July 2003	
Q	AV	Ribas-Cobera, Jordi et al; "A Generalized Hypothetical Reference Decoder for H.264/AVC"; IEEE Transactions on Circuits and Systems for VideoTechnology; Vol. 13, No. 7, July 2003	
Q	AW	Marpe, Detlev et al; "Proposed Editorial Changes and Cleanup of CABAC"; Joint Video Team of ISO/IEC MPEG & ITU-T VCEG; Document JVT-D019; 4th Meeting: Klagenfurt, Austria, 22-26 July 2002	
Q	AX	Wiegand, Thomas; "Study of Final Committee Draft of Joint Video Specification (ITU-T Rec. H.264, ISO/IEC 14496-10 AVC0)"; Joint Video Team of ISO/IEC MPEG & ITU-T VCEG; Document JVT-F100d2; 6th Meeting: Awaji, Island, JP, 5-13 December 2002	

Examiner Signature	<i>Cam Ma</i>	Date Considered	1/3/05
--------------------	---------------	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	10/622,335
		Filing Date	7/17/2003
		First Named Inventor	Marpe, et al.
		Art Unit	Unknown
		Examiner Name	Unknown
Sheet 6	of 6	Attorney Docket Number	SCHO0150

OTHER PRIOR ART—NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
D	AY	Wiegand, Thomas: "Study of Final Committee Draft of Joint Video Specification (ITU-T Rec. H.264, ISO/IEC 14496-10 AVC0)"; Joint Video Team of ISO/IEC MPEG & ITU-T VCEG; Document JVT-F100; 6th Meeting; Awaji, Island, JP, 5-13 December 2002	
D	AZ	The Concept of a Random Variable, pages 82-84, April 1996	
D	BA	Marpe, Detlev, et al; "Improved CABAC"; ITU - Telecommunications Standardization Sector; VCEG-018r1; 15th Meeting; Pattaya, Thailand, 4-6 Dec. 2001	

Examiner Signature	<i>Cam Mac</i>	Date Considered	1/3/05
--------------------	----------------	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.